

ADDITIONAL NOTES ON THE GENUS CITHAREXYLUM. X

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CITHAREXYLUM SESSAEI D. Don

Additional bibliography: Moldenke, Fifth Summ. 1: 68, 430, 435, & 436 (1971) and 2: 787 & 860. 1971; El-Gazzar, Egypt. Journ. Bot. 17: 75 & 78. 1974; Moldenke, Phytologia 32: 74. 1975.

Additional citations: MEXICO: Michoacán: Hinton 15678 (Se-117444).

CITHAREXYLUM SHREVEI Moldenke

Additional bibliography: Moldenke, Phytologia 13: 313. 1966; Moldenke, Fifth Summ. 1: 68 (1971) and 2: 861. 1971.

CITHAREXYLUM SOLANACEUM Cham.

Additional & amended bibliography: Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 550 (1893) and imp. 2, 1: 550. 1946; Rambo, Sellowia 7: 260 & 288. 1956; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 550. 1960; Angely, Fl. Anal. Paran., ed. 1, 578. 1965; Moldenke, Phytologia 13: 313. 1966; Reitz, Sellowia 22: 34. 1970; Angely, Fl. Anal. & Fitogeogr. S. Paulo, ed. 1, 4: 830 & iv. 1971; Moldenke, Fifth Summ. 1: 448, 357, & 436 (1971) and 2: 861. 1971; Moldenke, Phytologia 27: 161 (1973) and 32: 62. 1975.

The Angely (1971) reference in the bibliography of this species is sometimes cited as "1970", the title-page date, but was not actually published until 1971.

Recent collectors describe this species as a treelet or shrub, 2 m. tall, with fragrant flowers. The corollas are described as having been "white" on Hatschbach 17570 & 25611. The species has been found growing along roadsides and in secondary forests, flowering in October and fruiting in March.

Material has been misidentified and distributed in some herbaria as Aegiphila obducta Vell. or as Citharexylum glaziovii Moldenke. On the other hand, the Hatschbach 25760, distributed as C. solanaceum, is actually C. myrianthum Cham.

Additional citations: BRAZIL: Paraná: Hatschbach 17570 (Ft, W-2536539), 25611 (N, W-2706929); Hatschbach & Guimarães 20518 (Ac); Lindeman & Haas 533 (N); Reitz & Klein 17750 (N, W-2548338). Rio Grande do Sul: Rambo 54617 (B); Sehnen 7953 (B).

CITHAREXYLUM SOLANACEUM var. INSOLITUM Moldenke

Additional bibliography: Moldenke, Phytologia 7: 30-31. 1959; Moldenke, Fifth Summ. 1: 357 (1971) and 2: 861. 1971.

CITHAREXYLUM SOLANACEUM var. MACROCALYX Moldenke

Additional bibliography: Moldenke, Phytologia 13: 313. 1966; Moldenke, Fifth Summ. 1: 448 (1971) and 2: 961. 1971.

CITHAREXYLUM SPATHULATUM Moldenke & Lundell

Additional synonymy: Citharexylum brachyanthum glabrum Hitchc. & Moldenke ex Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1814, in syn. 1970.

Additional bibliography: Moldenke, Phytologia 13: 313. 1966; Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1814. 1970; Moldenke in Correll & Johnston, Man. Vasc. Pl. Tex. [Contrib. Tex. Res. Found. Bot. 6:] 1337 & 1338. 1970; Moldenke, Fifth Summ. 1: 55 & 432 (1971) and 2: 569 & 861. 1971.

Recent collectors describe this plant as a slender openly branched shrub, 4 feet tall, the branches long, slender, flexible, and the fruit orange-red, globose, 6--7 mm. in diameter. They found it growing in brush on sandy plains and on gravel hills, fruiting in November. The fruits are sometimes inaccurately described as "berries", but actually are drupes. A popular name recorded for the species is "Mission fiddlewood".

Material has been misidentified and distributed in some herbaria as "Rhamnaceae". On the other hand, the Araiza 19, distributed as C. spathulatum, is actually C. brachyanthum (A. Gray) A. Gray.

Additional citations: TEXAS: Hidalgo Co.: Lundell & Lundell 12689 (Mi, N). Starr Co.: Lundell & Lundell 12676 (Mi, N); Rose & Russell 24364 (N).

CITHAREXYLUM SPINOSUM L.

Additional & emended synonymy: Citharexylum teres Jacq., Select. Stirp. Amer. Hist. 185, pl. 118. 1763. Citharexylum cinereum Jacq. ex J. F. Gmel. in L., Syst. Nat., ed. 13, imp. 1, 2: 942. 1789 [not C. cinereum Donn. Sm., 1907, nor L., 1763, nor Sessé & Moc., 1831, nor Spreng., 1893, nor Citharexylon cinereum L., 1851, nor Spreng., 1851]. Citharexylum laevigatum Hostm. ex Griseb., Fl. Brit. W. Ind. 497, in syn. 1861. Citharexylum quadrangulare Schau. apud Griseb., Fl. Brit. W. Ind. 497, in syn. 1861. Citharexylum cinereum "sensu Mayc." apud Gooding, Loveless, & Proctor, Fl. Barbados 356. 1965. Citharexylum quadrangulare Jacq. apud Uphof, Dict. Econ. Pl., ed. 2, 133, sphalm. 1968. Citharexylum cinereum Lam. apud López-Palacios, Revist. Fac. Farm. Univ. Los Andes 15: 21, in syn. 1975. Citharexylum sponosum L. ex López-Palacios, Revist. Fac. Farm. Univ. Los Andes 15: 15, sphalm. 1975.

Additional & emended bibliography: J. F. Gmel. in L., Syst. Nat., ed. 13, imp. 1, 2: 943 (1789) and ed. 13, imp. 2, 2: 943. 1796; Rausch., Nom. Bot., ed. 3, 173. 1797; Desf., Tabl. Écol. Bot., ed. 1, 54. 1804; Willd., Enum. Pl. Hort. Berol. 2: 650. 1809; Desf., Tabl. Écol. Bot., ed. 2, 65. 1815; Pers., Sp. Pl. 3: 357. 1819; Vesque, Ann. Sci. Nat. Paris, ser. 7, 1: 340 & 341, pl. 15, fig. 6. 1885; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 549--550. 1893; Solered., Syst. Anat. Dicot. 712 & 716. 1899; D. H. Scott in Solered., Syst. Anat. Dicot., transl. Eoodle & Fritsch, 1: 630 & 634. 1908; A. R. Northrop in J. L.

Northrop, *Naturalist in Bahamas* 180 & 204. 1910; Parker, *Forest Fl. Punj.*, ed. 2, 405. 1924; Wilder, *Frag. Path* 206 & 386. 1932; Makins, *Ident. Trees & Shrubs* 89 & 258, fig. 77 C. 1936; Moldenke, *Carnegie Inst. Wash. Publ.* 522: 190. 1940; Moldenke in *Lundell, Fl. Tex.* 3 (1): 73. 1942; Jacks. in *Hook. f. & Jacks.*, *Ind. Kew.*, imp. 2, 1: 549—550. 1946; Metcalfe & Chalk, *Anat. Dicot.* 1033. 1950; Cabrera, *Man. Fl. Alred. Buenos Aires* 391. 1953; Parker, *For. Fl. Punj.*, ed. 3, 576. 1956; H. St. John, *Nomencl. Pl.* 123. 1958; R. M. Carleton, *Ind. Common Names Herb. Pl.*, imp. 1, 88. 1959; Moldenke, *Phytologia* 6: 463. 1959; Jacks. in *Hook. f. & Jacks.*, *Ind. Kew.*, imp. 3, 1: 549—550. 1960; J. F. Macbr., *Field Mus. Publ. Bot.* 13 (5): 674 & 675. 1960; R. M. Carleton, *Ind. Common Names Herb. Pl.*, imp. 2, 88. 1962; Maheshwari, *Fl. Delhi* 278. 1963; Srinivasan & Agarwal, *Bull. Bot. Surv. India* 5: 80. 1963; Little & Wadsworth, *Common Trees Puerto Rico* [U. S. Dept. Agr. Agric. Handb. 249:] 480. 1964; Juri, Jain, Mukerjee, Sarup, & Kotwal, *Rec. Bot. Surv. India* 19: 108. 1964; Gooding, Loveless, & Proctor, *Fl. Barbados* 356. 1965; D. A. Harris, *Univ. Calif. Publ. Geogr.* 18: [Pl. Anim. & Man Outer Leeward Isls.] 42, 44, 151, & 153. 1965; Troncoso in *Cabrera, Fl. Prov. Buenos Aires* 5: 448. 1965; Burkill, *Dict. Econ. Prod. Malay Penins.* 1: 567. 1966; Datta & Majumdar, *Bull. Bot. Soc. Bengal* 20: 102. 1966; S. V. Ramaswami, *Study Flow. Pl. Bangalore* [thesis] xxv, 1023—1024, & 1390. 1966; J. A. Steyerl., *Act. Bot. Venez.* 1: 184. 1966; Berhaut, *Fl. Sénégal*, ed. 2, 112 & 127. 1967; Moldenke, *Phytologia* 14: 510—511. 1967; Moldenke, *Résumé Suppl.* 15: 8 (1967), 16: 7 & 9 (1968), and 17: 7 & 8. 1968; A. Löve, *Taxon* 17: 576. 1968; Uphof, *Dict. Econ. Pl.*, ed. 2, 133. 1968; Corner & Watanabe, *Illustr. Guide Trop. Pl.* 753. 1969; Kunkel, *Arb. Exot.* 1: 86—87. 1969; A. L. Moldenke, *Phytologia* 18: 115. 1969; El-Gazzar & Wats., *New Phytol.* 69: 483 & 485. 1970; Angely, *Fl. Anal. & Fito-geogr. S. Paulo*, ed. 1, 4: 830 & iv. 1971; Moldenke, *Fifth Summ.* 1: 92, 95, 100, 102, 104, 106—109, 111, 112, 122, 129, 132, 133, 203, 214, 228, 272, 280, 299, 350, 357, 427—437, & 474 (1971) and 2: 526, 775, 861, & 969. 1971; A. L. Moldenke, *Phytologia* 23: 318. 1972; Rouleau, *Taxon Index Vol. 1—20, part 1*: 88. 1972; Tomlinson & Fawcett, *Journ. Arnold Arb.* 53: 386—389. 1972; R. R. Rao, *Stud. Flow. Pl. Mysore Dist.* [thesis] 2: 747. 1973; Wedge, *Pl. Names*, ed. 1, 7. 1973; El-Gazzar, *Egypt. Journ. Bot.* 17: 75 & 78. 1974; R. D. Gibbs, *Chemotax. Flow. Pl.* 4: 1753, 1754, & 2079. 1974; Howes, *Dict. Useful Pl.* 96. 1974; León & Alain, *Fl. Cuba*, imp. 2, 2: 299—301. 1974; Little, Woodbury, & Wadsworth, *Trees P. R. & Virg. Isls.* 2 [U. S. Dept. Agr. Agric. Handb. 449]: xii, 854, 858, 859, 994, 995, 1000, 1004, & 1021, fig. 680. 1974; Moldenke, *Phytologia* 28: 434, 444, & 448. 1974; Troncoso, *Darwiniana* 18: 373. 1974; Wilder, *Frag. Gard.* 206 & 386. 1974; López-Palacios, *Revist. Fac. Farm. Univ. Los Andes* 15: 12, 15, 17, 18, & 20—21, [fig. 2]. 1975; Moldenke, *Phytologia* 31: 337, 338, 359, 380, 382, 394, 451, 455, & 457 (1975) and 32: 53 & 60. 1975.

Additional illustrations: Vesque, *Ann. Sci. Nat. Paris*, ser. 7, 1: pl. 15, fig. 6. 1885; Makins, *Ident. Trees & Shrubs* 89, fig. 77

C. 1936; Corner & Watanabe, *Illustr. Guide Trop. Pl.* 753. 1969; Kunkel, *Arb. Exot.* 1: 87. 1969; Little, Woodbury, & Wadsworth, *Trees P. R. & Virg. Isl.* 2 [U. S. Dept. Agr. Agric. Handb. 449]: 859, fig. 680. 1974; López-Palacios, *Revist. Fac. Farm. Univ. Los Andes* 15: [fig. 2] (as "C. fruticosum"). 1975.

Recent collectors describe this plant as a shrub, 10 feet tall, or a small tree, 15—40 feet tall, the petioles orange, tan at the base, the flower-buds pinkish, the flowers small or "tiny" and sweetly fragrant, and the fruit orange, turning black. They have found it growing at the edge of mangrove swamps, on dry hillsides above the sea, in thickets at the edge of sea-cliffs, on dry shrub-covered slopes, and in seasonal secondary deciduous forests, at altitudes of 20—1550 feet, flowering in January, May, July, August, and November, and fruiting in January, July, August, and November. Wilbur and his associates refer to it as "a common tree" on Dominica. The corollas are described as "white" on all the flowering specimens cited below except on St. John s.n., where they are described as "pink".

In addition to the vernacular names previously reported by me, the following are also recorded: "arbre à cithare", "bellasombre", "bois-guitare", "bois-guitare quadrangulaire", "bois-guitare", "bois-guitare quadrangulaire", "cotlette", "nh8i", "old-woman's-bitter", "totumo", and "white fiddle wood". It should be pointed out again that the many names applied to this species, and to other species in this genus, implying a use in the manufacture of fiddles or violins seem to be mis-applied. The original French indigenous name in the French West Indies seems to have been "bois fidèle", meaning a wood which can be relied on, but which was corrupted in English to "fiddle wood" and perpetuated in the scientific generic name, the recommended common name for the genus, and numerous vernacular appellations. Its Indochinese name, "nh8i", according to Crevost & Petelot (1934), is applied there, again, because of its supposed (?) use in making musical instruments ["Bon pour la lutherie"].

Sykes speaks of the leaves of C. spinosum being "frosted" in New Zealand (North Island), by which statement he probably means that they are killed by unseasonable frosts, implying that the tree itself may survive temperatures leading to frosts.

Leaves on young sterile shoots are coarsely and irregularly few-toothed, as is well shown on Ruiz-Terán & López-Palacios 9891, on Moldenke, Moldenke, & Jayasuriya 28143, and in the excellent illustration by Crevost & Petelot (1934). This fact seems to be the basis for the plant being so widely misidentified in horticulture, especially in Asia and Africa, as C. subserratum Sw. [now known as C. fruticosum var. subserratum (Sw.) Moldenke]. Crevost & Petelot (1934) assert that it is "assez fréquent dans les jardins de Hanoi" [Vietnam]. Kunkel (1969) reports it as cultivated in several parks on Gran Canaria in the Canary Islands. Maheshwari (1963) describes it as a small tree, the "Leaves ovate, elliptic or lanceolate, glossy, tapering at [the] ends, subcoriaceous. Flowers white, fragrant, in long, drooping racemes.

Planted in the lawns or gardens along the side-lanes of New Delhi [India] and in hedges". He asserts that in India it is called "fiddle wood" and blooms from September to November. He cites Maheshwari 466. Srinivasan & Agarwal (1963) record it from Lahore, Punjab, and Khandala (Bombay). Puri and his associates (1964) speak of a C. subserratum as cultivated in India, but I suspect that they are here again referring to C. spinosum.

Harris (1965) reports C. spinosum from mixed evergreen deciduous forests on Antigua. Parker (1924) comments that the species is "Very variable in its habitat but not armed as the specific name suggests. Commonly grown in gardens in the plains [of Punjab] and usually called C. subserratum, Sw., which is a shrub from the West Indies. The wood is said to be specially suitable for making violins whence the generic and English names" (!) He notes that it flowers in Punjab from August to November. Gooding and his associates (1963) report finding it "in woods and gullies and widely cultivated" in the Barbados. My wife and I found it cultivated as a street tree in Honolulu, Hawaii, and as specimen trees in the Botanical Garden in Sri Lanka. Sivaraman notes that in Kerala it is "never seen in fruit, probably dioecious". Datta & Majumdar (1966) assert that in Bengal it flowers from May to June. Burkill (1966) affirms that it "has been cultivated for a number of years in the Botanic Gardens, Singapore, and grows satisfactorily" there. My wife and I did not see it on our recent visit to that garden.

Jafri & Ghafoor, in their as yet unpublished part of the Flora of Pakistan, affirm that this species was originally imported from the Barbados, cite Saida s.n. from a cultivated tree in Karachi, and assert that the species is "sometimes cultivated in our gardens for its scented flowers", blooming there from August to November. Again, my wife and I did not see it on our visit to Karachi. Rauschel (1797) gives its native origin as "Martin[ique]".

Dinsmore reports that C. spinosum is "a fairly common but not abundant tree found throughout the island [Little Tobago] but never in thick stands or more than a few trees together. Grows to about fifty feet tall but most much shorter. Found in wind-swept areas as well as protected forest. Flowers shortly after the rains start at the end of [the] dry season in April, all the trees on the island flowering at approximately the same time. Flowers white. Fruit an orange berry [actually it is a drupe!], ripe in August, September and October. Fed on extensively by mockingbirds, thrushes and tanagers. Sheds leaves late in dry season." Uphof (1968) asserts that its wood is strong and reddish, used for general building purposes, windows, doors, and beams, and "for guitars by the natives".

Ruiz-Terán and López-Palacios describe what may be this species in Venezuela as an "árbol inerme, 8-10 m; tronco cilíndrico, tortuoso, 15-20 cm. de diámetro; copa amplia, muy irregular; hojas simples, opositodecussadas, verde intensas, lucientes por la haz, verde claras, sublucientes por el envés; drupas subma-

turas globoso-ovoides, lisas, lucientes, glabras; espécie moderadamente frecuente; alt. 100-450 m."

Löve (1968) reports the chromosome number as $2n = 76$, based on Mehra & Gill 1177, cultivated in India. Scott (1908) reports that the development of the stomatal apparatus in C. spinosum is of the cruciferous type. Gibbs (1974) reports syringin absent from the stems of this plant and asserts that the HCl/methanol test gives only negative results.

Northrop (1910) misidentified that plant in the Bahamas as C. lucidum Cham. & Schlecht, of Mexico, based on her own collections, and gives this species the remarkable general distribution of "Andros, Cuba, Jamaica, Windward Islands, Mexico, Central America, and South America".

Seaver & Waterston (1940, 1942) describe the fungus, Ascospora citharexyl Seav. & Waterst., from dead leaves of C. spinosum in Bermuda. Its erumpent black perithecia are thickly scattered over both surfaces of the leaves. They also found Penzigia bermudensis growing abundantly on dead twigs of C. spinosum and Auricularia polytricha (Mont.) Sacc. on old stumps.

It should be noted here that the Angely (1971) reference in the bibliography above is sometimes cited as "1970", the title-page date, but was not actually published until 1971. The Mell & Mell 247, cited below, was erroneously cited by me in 1959 as C. macrophyllum Poir.

Gooding and his associates (1968) cite Herb. Barb. Mus. 227 & 228 from the Barbados islands.

Material of C. spinosum has been misidentified and distributed in many herbaria as C. subserratum Sw., C. fruticosum L., and even as Cordia sp. On the other hand, the Chippendale 23682, distributed as C. spinosum, is actually C. affine D. Don; Gastony, Jones, & Norris 427 is C. caudatum L.; A. A. Heller 4421 and C. R. Proctor 9506 are C. fruticosum L.; Täckholm & Elsayed s.n. [24/5/1962] is C. hidalgense Moldenke; Din s.n. [spring 1968] is C. montevidense (Spreng.) Moldenke; Hunger Filho s.n. [julho 1928] is C. myrianthum Cham.; and Batanouny s.n. and Täckholm & Elsayed s.n. [14/11/1961] are not verbenaceous. Little 26048 and Täckholm & Elsayed s.n. [22/11/1961] are a mixture of C. spinosum and something non-verbenaceous.

Additional citations: VIRGIN ISLANDS: St. Croix: Little 26048, in part (N, W-26904241). LEeward ISLANDS: Dominica: Gillis 8149 (Ft-9528); Nicolson 1883 (W-2468595), 1900 (W-2468594); Stern & Wasshausen 2436 (W-2566045); Wilbur, Dunn, Hesperheide, & Wiseman 7379 (W-2534420), 8236 (Au-272130, N, W-2579006), 8263 (W-2578999). WINDWARD ISLANDS: St. Lucia: G. R. Proctor 18123 (W-2584990); Sauer 4323 (Ws). St. Vincent: Sauer 4265 (Ws). TRINIDAD AND TOBAGO: Little Tobago: Dinsmore JJD.40 (Ws), JJD.47 (Ws). VENEZUELA: Falcón: Ruiz-Terán & López-Palacios 10231 (Id).

[to be continued]